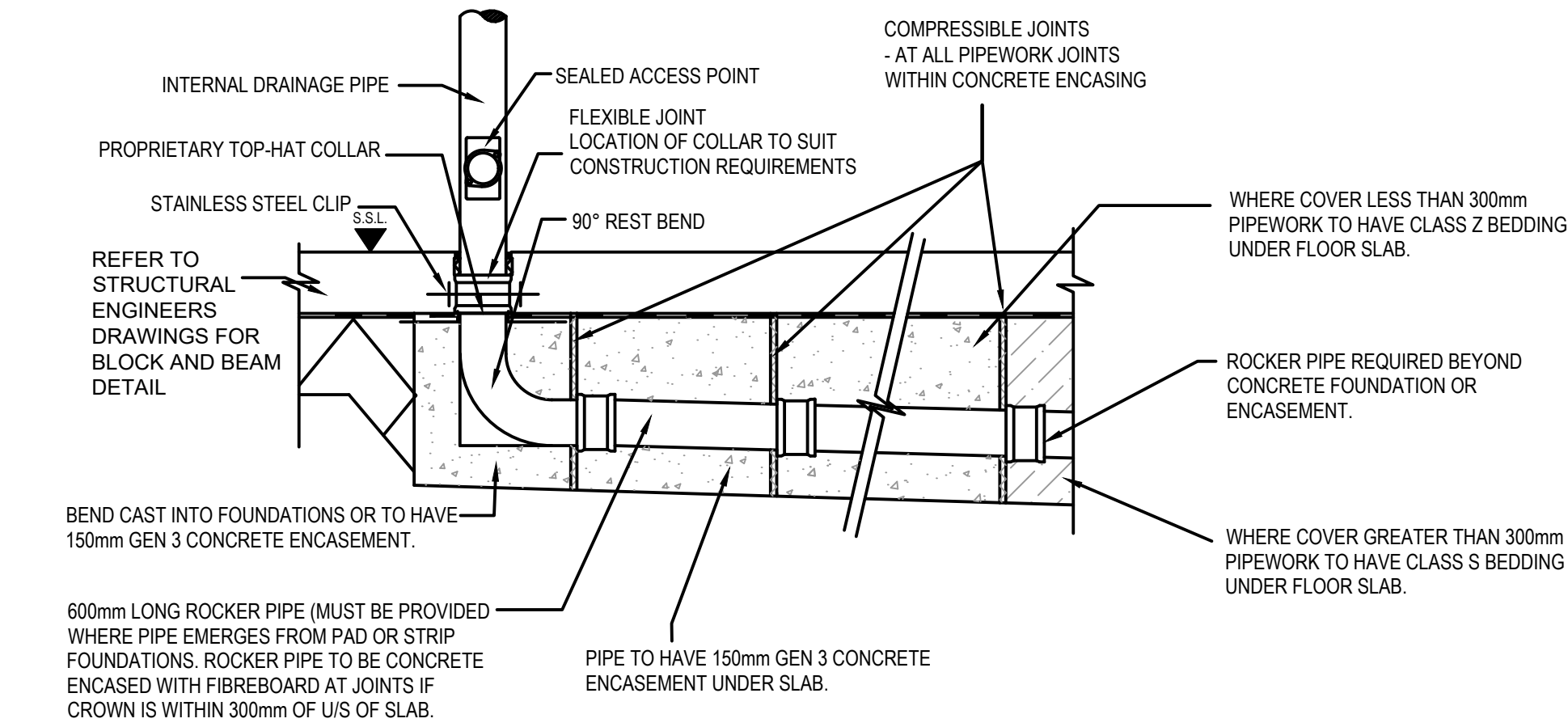
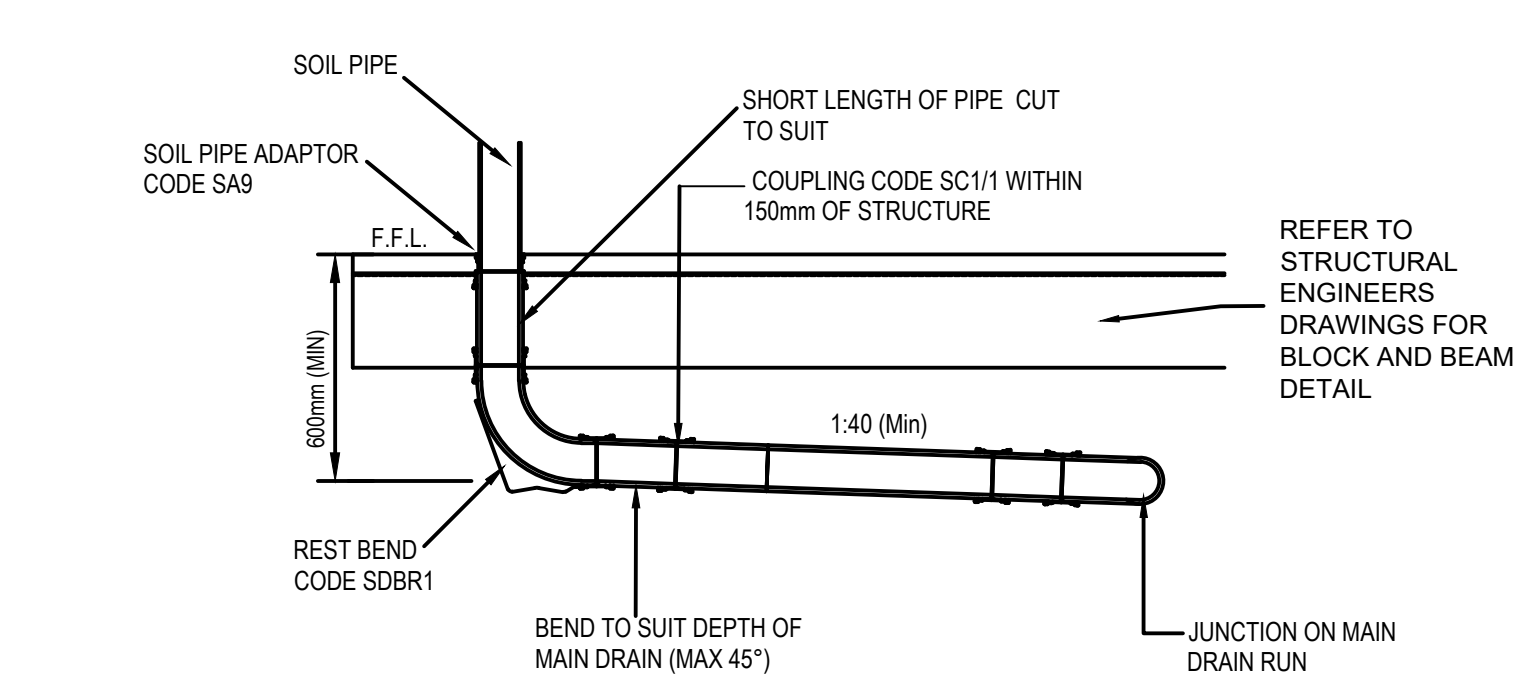
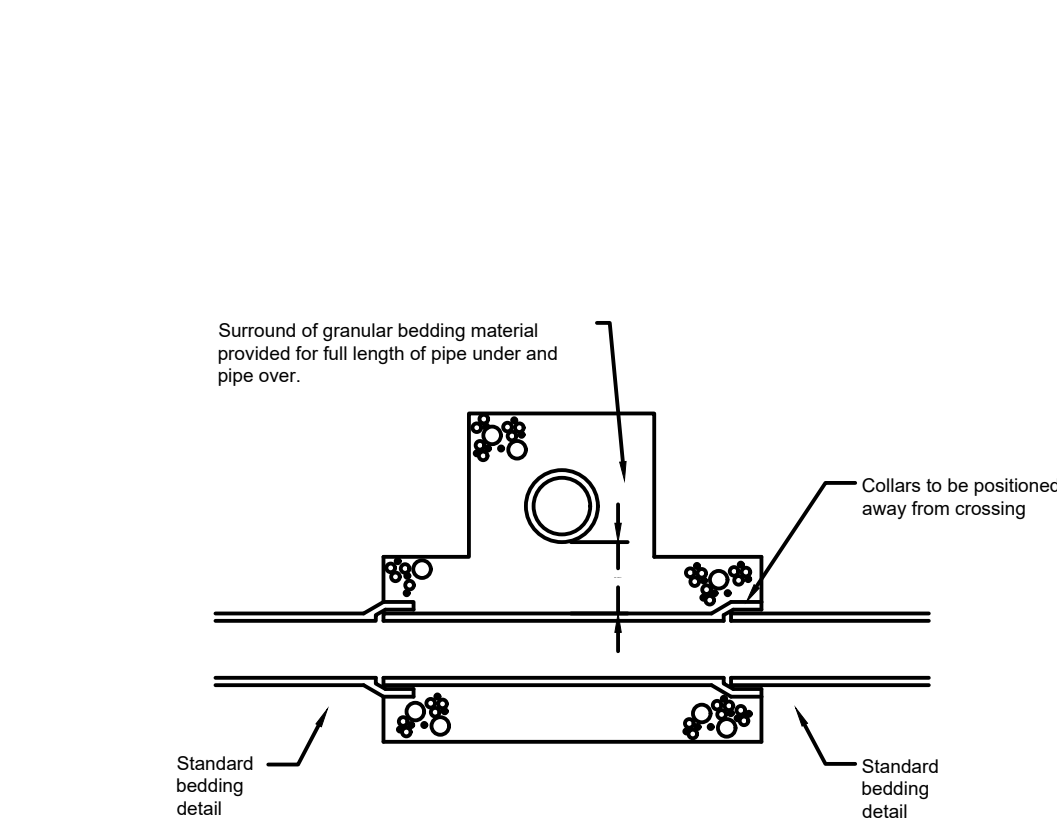




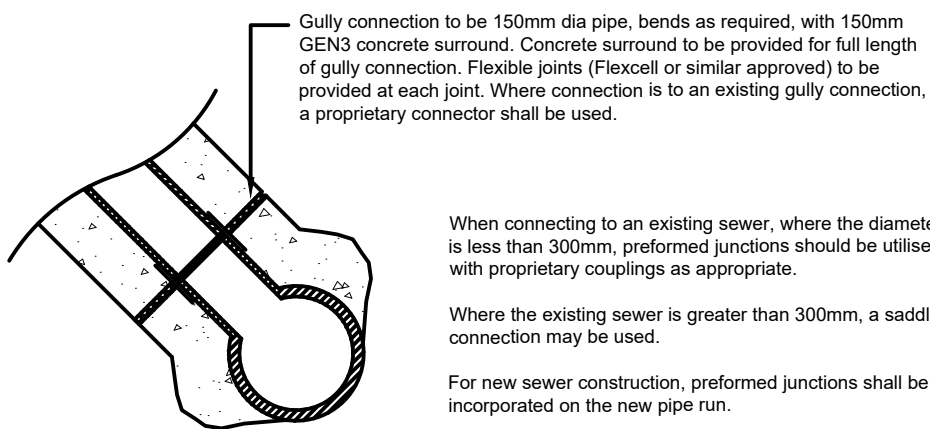
DRAINAGE UNDER BUILDINGS



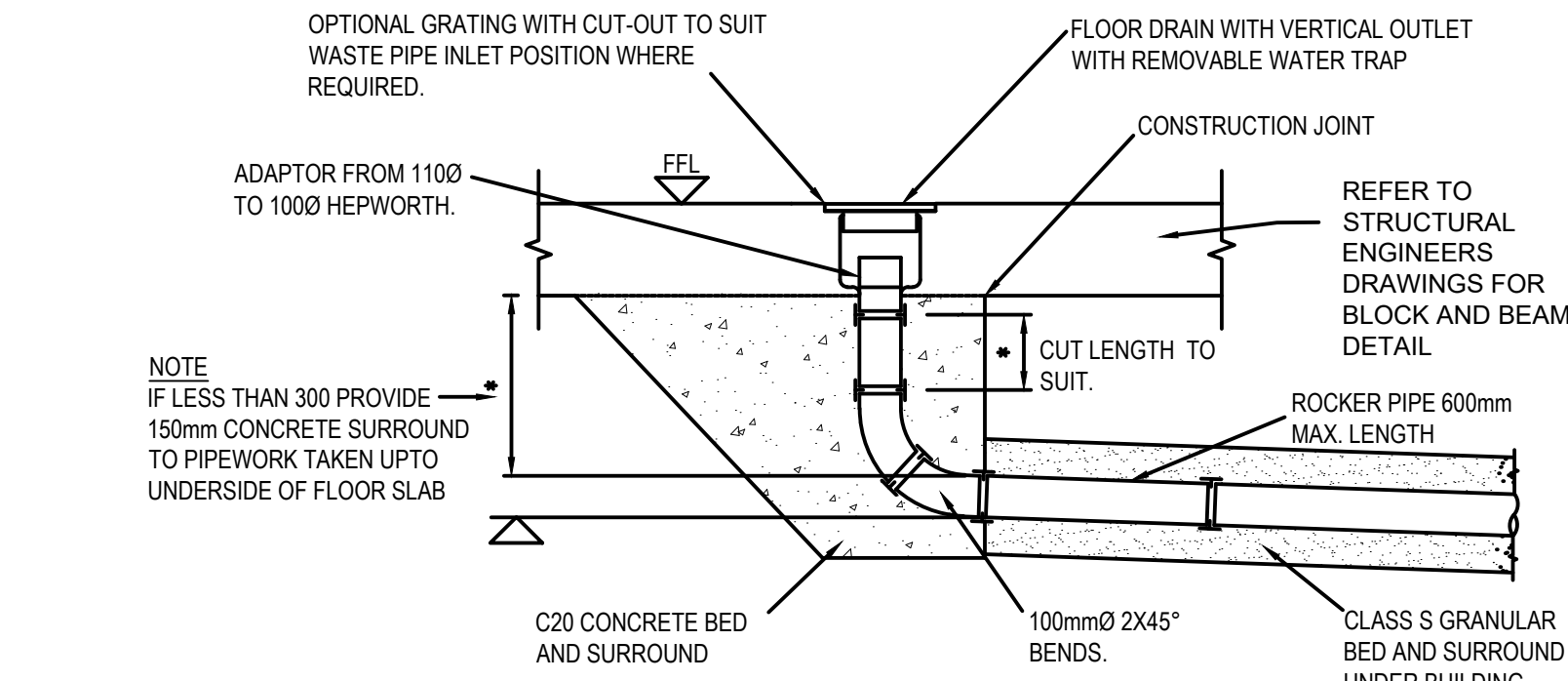
TYPICAL SVP CONNECTION TO MAIN RUN



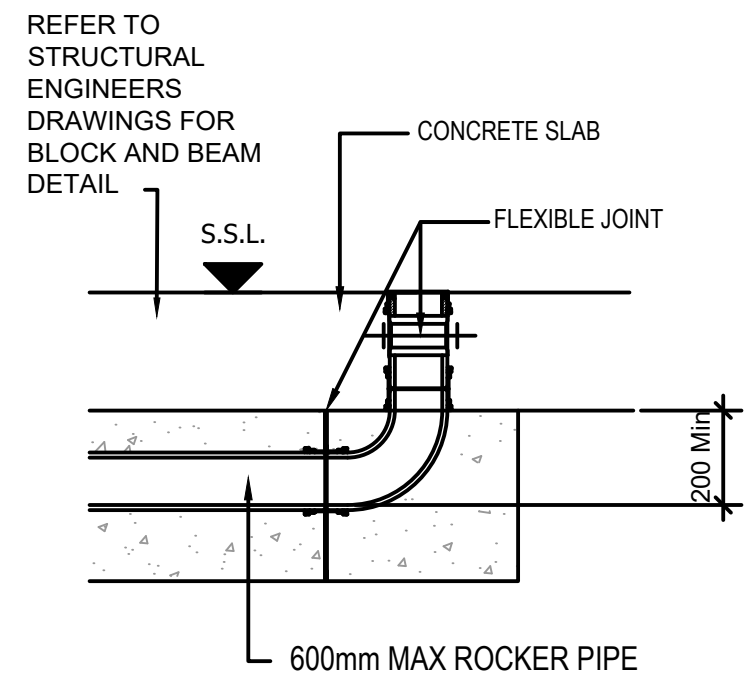
PIPE CROSSINGS DETAIL



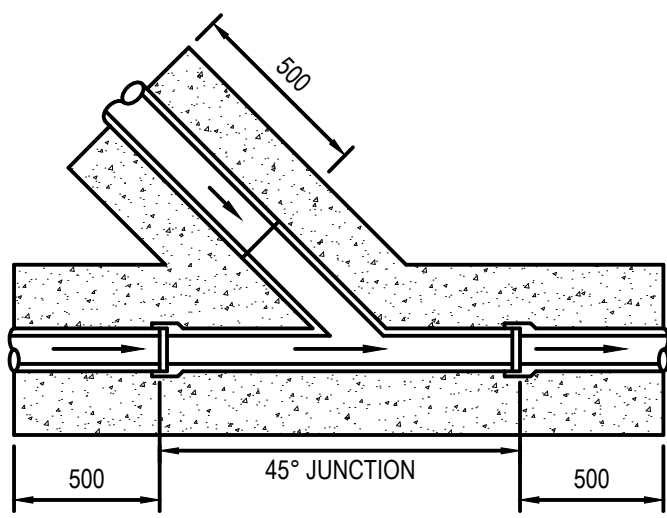
SADDLE CONNECTION TO EXISTING SEWER



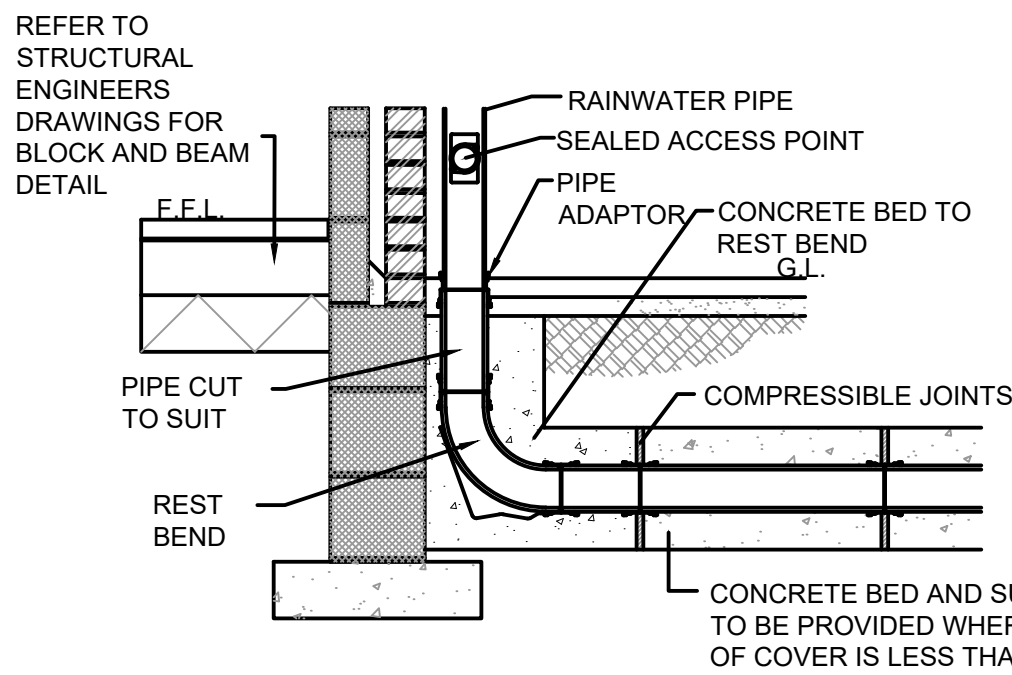
TYPICAL INTERNAL FLOOR DRAIN



TYPICAL SECTION THROUGH SLAB (100mmØ downpipe)



TYPICAL SADDLE CONNECTION



RWP CONNECTION DETAIL (SCALE 1:20)

Technical Specification

Control Point	Head (m)	Flow (l/s)
Primary Design	1.200	5.000
Flush-Flo™	0.354	4.998
Kick-Flo®	0.745	4.010
Mean Flow		4.368

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Hydro-Brake® Optimum Flow Control including:

- 3 mm grade 304L stainless steel
- Integral stainless steel pivoting by-pass door allowing clear line of sight through to outlet, on stainless steel operating pipe
- Beed blasted finish to maximise corrosion resistance
- Stainless steel fixings
- Rubber gasket to seal outlet
- Indicative Weight: 16 kg

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE No DB/4566

WRC APPROVED PT/329/0412

POSITION & DIRECTION OF INLET PIPES WILL BE SPECIFIED ON THE CONTRACT DRAWINGS

FIXING BOLTS WITH MASONRY STUD ANCHOR FIXING BOLTS*

HYDRO-BRAKE® OPTIMUM FLOW CONTROL, FITTED WITH PIVOTING BY-PASS DOOR*

150 I.D. OUTLET (MINIMUM)

100mm MIN FOR FIXINGS

BENCHING

ACCESS TO BE POSITIONED ABOVE BY-PASS DOOR

PULL HANDLE & EYE BRACKET FOR OPERATING ROPE

PIVOTING BY-PASS DOOR OPERATING STEEL ROPE*

PIVOTING BY-PASS DOOR*

SECTION A-A

SECTION B-B

IMPORTANT: LIMIT OF HYDRO INTERNATIONAL SUPPLY THE DEVICE WILL BE HANDLED TO SUIT SITE CONDITIONS FOR SITE SPECIFIC DETAILS AND MINIMUM CHAMBER SIZE REFER TO HYDRO INTERNATIONAL ALL CIVIL AND INSTALLATION WORK BY OTHERS *WHERE SUPPLIED HYDRO-BRAKE® FLOW CONTROL & HYDRO-BRAKE® OPTIMUM FLOW CONTROL ARE REGISTERED TRADEMARKS FOR FLOW CONTROLS DESIGNED AND MANUFACTURED EXCLUSIVELY BY HYDRO INTERNATIONAL

THIS DESIGN LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY. NOT TO SCALE.

DESIGN ADVICE

! The head/flow characteristics of this SHE-0103-5000-1200-5000 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve. The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.

DATE 24/04/2023 13:49

SITE EVERY STREET

DESIGNER carl dawson

REF 1-21590

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SHE-0103-5000-1200-5000

Hydro-Brake® Optimum

Technical Specification

Control Point	Head (m)	Flow (l/s)
Primary Design	1.200	5.000
Flush-Flo	0.354	4.998
Kick-Flo®	0.745	4.010
Mean Flow		4.368

hydro-int.com/patents

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE No DB/4566

WRC APPROVED PT/329/0412

Head (m)

Flow (l/s)

Head (m)	Flow (l/s)
0.000	0.000
0.041	0.876
0.083	2.748
0.124	4.215
0.166	4.548
0.207	4.761
0.248	4.891
0.290	4.963
0.331	4.994
0.372	4.995
0.414	4.976
0.455	4.943
0.497	4.896
0.538	4.835
0.579	4.753
0.621	4.643
0.662	4.493
0.703	4.290
0.745	4.026
0.786	4.110
0.828	4.209
0.869	4.304
0.910	4.398
0.952	4.489
0.993	4.578
1.034	4.665
1.076	4.751
1.117	4.835
1.159	4.917
1.200	4.997

DESIGN ADVICE

! The head/flow characteristics of this SHE-0103-5000-1200-5000 Hydro-Brake® Optimum® Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve. The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.

DATE 24/04/2023 13:49

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Ref 1-21590

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SHE-0103-5000-1200-5000

Hydro-Brake Optimum®

1. DO NOT SCALE THIS DRAWING.

2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

3. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS AND SPECIFICATIONS.

4. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO COMMENCING ANY WORKS SHOWN.

5. ALL DETAILS TO BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL COUNCILS BUILDING CONTROL, OR ANY OTHER RELEVANT STANDARDS BODY.

6. ALL PROPRIETARY PRODUCT TO BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS, INSTRUCTIONS AND RECOMMENDATIONS.

7. NO WORK SHALL COMMENCE ON SITE UNTIL WRITTEN APPROVAL IS RECEIVED FROM THE ADOPTING HIGHWAY AUTHORITY, ADOPTING SEWERAGE UNDERTAKERS, ENVIRONMENT AGENCY AND/OR ANY OTHER RELEVANT AUTHORITY. WORKS UNDERTAKEN PRIOR TO APPROVAL ARE AT THE DEVELOPERS RISK AND CLANCY CONSULTING LIMITED WILL NOT BE HELD RESPONSIBLE FOR SUBSEQUENT DELAYS IN APPROVALS, REMEDIAL OR COSTS INCURRED.

8. ALL INVERT LEVELS OF EXISTING FOUL AND SURFACE WATER SYSTEMS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ANY ON SITE DRAINAGE WORKS. ANY DISCREPANCY IN LEVELS IS TO BE REPORTED IMMEDIATELY TO CLANCY CONSULTING LIMITED.

9. ALL SEWERS, UNLESS AGREED OTHERWISE STATED, SHALL BE: 150MM DIA TO BE VITRIFIED CLAY. 225MM DIA TO BE VITRIFIED CLAY. 300MM DIA TO BE VITRIFIED CLAY. 375MM DIA AND GREATER TO BE CLASS 2/25 CONCRETE PIPES.

10. ALL VITRIFIED CLAY PIPES TO BS EN 295-1. ALL CONCRETE PIPES TO BE TO BS EN 1916. ALL CONCRETE MANHOLES TO BE TO BS EN1917.

11. LATERAL CONNECTIONS FROM MAIN SEWERS TO DEMARCATION CHAMBER TO BE 150MM DIA MINIMUM UNLESS AND CONSTRUCTED TO ADAPTABLE STANDARDS.

12. FIRST PIPE OUT OF MANHOLES TO BE AS SHORT AS PRACTICABLE SO AS TO PROVIDE A FLEXIBLE JOINT AS CLOSE AS POSSIBLE TO THE OUTSIDE FACE OF THE CONCRETE SURROUND AND CONNECTED TO A LENGTH OF ROCKER PIPE.

13. ALL PIPE DIAMETERS GIVEN ARE NOMINAL INTERNAL PIPE DIAMETERS.

14. ALL SEWER WORKS TO COMPLY WITH WRC SEWERS FOR ADOPTION, 6TH EDITION, STWS REQUIREMENTS AND KITE-MARKED COVER (SIMILAR APPROVED) WHERE PRACTICABLE. WHERE CONFLICTING DETAILS OCCUR, STWS DETAILS SHALL TAKE PRECEDENCE IN ALL CASES.

15. MANHOLE COVERS SHALL HAVE A CLEAR OPENING IN ACCORDANCE WITH SFA 6TH EDITION AND SHALL BE CLASS D400 TO BS EN 124 WITH 150MM DEEP FRAMES IN VEHICULAR TRAFFICED AREA. CLASS 8/125 COVERS AND FRAMES TO BE PROVIDED ON ALL OTHER MANHOLES IN LANDSCAPING.

16. FILLED GROUND MUST BE FILLED AND CONSOLIDATED BEFORE ANY SEWER WORKS ARE CARRIED OUT.

17. WATER AUTHORITIES ARE NOT OBLIGED TO ACCEPT FILTER DRAIN / LAND DRAINAGE RUN OFF INTO THE PUBLIC SEWER NETWORK OR ADAPTABLE DRAINAGE SYSTEM (DIRECTLY OR INDIRECTLY) AN ALTERNATIVE METHOD OF DISPOSAL OF LAND DRAINAGE RUN OFF WILL THEREFORE BE REQUIRED AND ANY PROPOSALS MUST BE AGREED WITH THE LOCAL AUTHORITY LAND DRAINAGE SECTION.

18. COVER SLABS MUST CARRY THE BS1 KITEMARK AND SHALL COMPLY WITH BS 5911 PART 1/BS EN 1917:2000. WHERE THE CLEAR OPENING OF THE KITE-MARKED PRODUCT IS DIFFERENT TO THAT OF THE COVER AND FRAME, A LOAD BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN AS SPECIFIED ABOVE. PLEASE REFER TO CONCRETE PIPELINE SYSTEMS ASSOCIATION (CPSA) 'TECHNICAL BULLETIN' ISSUED AUTUMN 2004 FOR KITE-MARKED COVER SLAB OPENING SIZES.

19. SULPHATE RESISTANT CEMENT (C20-0C2) AND PRECAST CONCRETE PRODUCTS MUST BE USED OR A LABORATORY REPORT PROVIDED TO PROVE THAT SUCH PRECAUTIONS ARE NOT REQUIRED.

20. ADAPTABLE SEWERS SHOULD BE A MINIMUM OF 1M AND MANHOLES 0.8M FROM KERB FACES AND SERVICE MANHOLES.

21. SEWERS MUST HAVE 9M CLEARANCE FROM TREES AND HEDGES OR TO HAVE SUITABLE ROOT PROTECTION IN ACCORDANCE WITH THE SFA 6TH REQUIREMENTS.

22. ALL PIPES TO HAVE CLASS 'S' GRANULAR BED AND SURROUND UNLESS OTHERWISE STATED. BEDDING AND BACKFILL MATERIALS TO CONFORM TO THE REQUIREMENTS OF BS 5400-5 (TABLE A2). WHERE DEPTH OF COVER TO TOP OF SEWER IS LESS THAN 1.2M IN HIGHWAYS AND VERGES (OR LESS THAN 0.9M IN NON-VEHICULAR ACCESSED AREAS), THEN A CLASS 'Z' BEDDING TO BE USED.

23. ALL SEWER TRENCHES AND BRANCH CONNECTIONS TO BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NOT EXCEEDING 225MM UNCONSOLIDATED THICKNESS THEN FULLY COMPACTED.

24. ADAPTABLE SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO ANY LONGER LENGTHS.

25. PLASTIC CHANNEL SECTIONS WILL NOT BE PERMITTED WITHIN MANHOLE CHAMBERS. CLAYWARE CHANNELS SHALL BE USED WITHIN MANHOLES FOR PIPE SIZES UP TO AND INCLUDING 300MM DIAMETER.

26. THE CHAMBER SIZE OF MANHOLES WITH MORE THAN ONE CONNECTION IN THEM MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTION AND BENDS.

27. SECTION 163 OF THE HIGHWAYS ACT 1980 REQUIRES PROVISION TO BE MADE TO PREVENT WATER FALLING ON OR FLOWING ONTO THE HIGHWAY FROM PRIVATE DRIVEWAYS OR PROPERTIES. ANY DRAINAGE REQUIREMENTS MUST BE CONNECTED INTO THE PRIVATE SURFACE WATER DRAINAGE SYSTEM.

28. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING:-

(i) ALL OPERATIONS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE GENERAL HEALTH AND SAFETY POLICY OF THE DEVELOPER AS REQUIRED BY SECTIONS 2 OF THE HEALTH AND SAFETY AT WORK ACT 1974 AND IN PARTICULAR THE CONSTRUCTION (GENERAL PROVISIONS) REGULATIONS.

(ii) THE LOCAL AUTHORITY AND UTILITIES COMPANIES ARE TO BE NOTIFIED PRIOR TO COMMENCEMENT OF WORK ON SITE.

(iii) PRIOR TO CONSTRUCTION THE ACTUAL POSITIONS AND DEPTHS OF SERVICES LIKELY TO BE AFFECTED BY THE WORKS SHOULD BE ESTABLISHED BY MEANS OF HAND DIG IN CLOSE LIAISON WITH THE UTILITY COMPANIES. THE CONTRACTOR SHALL IMMEDIATELY ADVISE THE ENGINEER OF ANY SERVICES EXPOSED WHICH MAY AFFECT THE DESIGN.

(iv) ALL OPERATIVES WORKING ON THE HIGHWAY WORKS MUST HAVE STREET WORKS ACCREDITATION.

29. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH CURTINS SPECIFICATION FOR DRAINAGE WORKS AND ANY OTHER SUBSEQUENT ADDITIONS TO THIS LIST.

30. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.

31. THE CONTRACTOR SHALL ALLOW FOR KEEPING TRENCHES AND EXCAVATIONS AS DRY AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY & LPA AND ENVIRONMENT AGENCY.

32. ALL DRAINAGE WORKS ARE TO BE CONSTRUCTED FROM THE OUTFALL TOWARDS THE HEAD OF RUN TO ENSURE THE OUTFALL CAN BE ACHIEVED.

Rev	Date	Description	By	Check	App.
P01	24.03.24	PRELIMINARY	CD	SW	DS

Client MCCAL DEVELOPMENTS

Project EVERY STREET, RESIDENTIAL DEVELOPMENT.

Office ALTRINCHAM

Discipline CIVILS

Title DRAINAGE DETAILS SHEET 2

Scale @ A1 NTS Status PRELIMINARY

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Client MCCAL DEVELOPMENTS

Project EVERY STREET, RESIDENTIAL DEVELOPMENT.

Office ALTRINCHAM

Discipline CIVILS

Title DRAINAGE DETAILS SHEET 2

Scale @ A1 NTS Status PRELIMINARY

Job Number	Originator	Building/Zone	Level
1-21590	CCL	XX	XX

Type	Discipline	Drawing No.	Revision
DR	C	502	P01

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